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**Optimizing duration of stored information in bundles of segmented magnetic nanowires**[1] EUGENIO VOGEL, EDUARDO CISTERNAS, DIEGO CEBALLOS, Universidad de La Frontera, JULIAN FANDEZ, Universidade Federal de Mato Grosso — Symbols or codes can be stored on a bunch of about a hundred thousand magnetic nanowires; in the present theoretical paper we explore ways to improve the duration of the stored information. Alumina membranes leave empty cylindrical columns which can be filled by metallic atoms. We consider the case of pores alternatively with a magnetic material for a length $2l$, then with a nonmagnetic material (or spacer) of length $t$, to finish with another magnetic portion of eventually the same length $2l$. These segmented nanowires are assumed to be homogeneous with diameter b, total length $2L = 4l + t$, with their cross sections defining a triangular lattice of interaxial distance $d$. To improve the duration of the inscribed information on the set of wires we minimize the interaction energy between any segment with all the others in both layers. The average energy per cylinder and maximum energy for any cylinder within the symbol are calculated in terms of $L, d$, and especially$t$. We conclude that for $t/d$ less than 10 optimum prevalence conditions are reached. Then we study the response of these systems to externally applied magnetic fields that could erase the information. Again this property is strongly dependent on $t/d$.

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